

- <110> FOGELMAN, ALAN M.
 ANANTHARAMAIAH, GATTADAHALLI M.
 NAVAB, MOHAMAD
- <120> ORALLY ADMINISTERED SMALL PEPTIDES SYNERGIZE STATIN ACTIVITY
- <130> 407T-911270US
- <140> US10/649,378
- <141> 2003-08-26
- <150> US10/423,830
- <151> 2003-04-25
- <150> US10/273,386
- <151> 2002-10-16
- <150> US10/187,215
- <151> 2002-06-28
- <150> US09/896,841
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- <150> US09/645,454
- <151> 2000-08-24
- <150> US60/494,449
- <151> 2003-08-11
- <160> 464
- <170> PatentIn version 3.3
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Ala Phe
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Glu Trp Leu Lys Ala Phe Tyr Glu Arg Val Ala Glu Arg Leu Lys Glu
Ala Phe
<210> 73
<211> 18
<212> PRT
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<400> 73
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Asp Trp Leu Arg Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu Arg Glu

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<210> 74
<211> 18
<212> PRT
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      unprotected D or L form.
<400> 74
Glu Trp Leu Arg Ala Phe Tyr Glu Lys Val Ala Glu Lys Leu Arg Glu
Ala Phe
<210> 75
<211> .18
<212> PRT
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Asp Trp Leu Arg Ala Phe Tyr Asp Arg Val Ala Glu Lys Leu Lys Glu
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Ala Phe
<210> 76
<211> 18
<212> PRT
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<223> Chemically synthesized peptide. Amino acids can be protected or
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<400> 76
Glu Trp Leu Arg Ala Phe Tyr Glu Arg Val Ala Glu Lys Leu Lys Glu
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<210> 77
<211> 18
<212> PRT
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      unprotected D or L form.
<400> 77
Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Ala Glu Arg Leu Arg Glu
                                   10
Ala Phe
<210> 78
<211> 18
<212> PRT
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<400> 78
Glu Trp Leu Lys Ala Phe Tyr Glu Lys Val Ala Glu Arg Leu Arg Glu
                                   10
Ala Phe
<210> 79
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<210> 80
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<211> 18

<212> PRT

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Ala Phe

<210> 81

<211> 37

<212> PRT

<213> Artificial Sequence

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Ala Phe Pro Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys 20 25 30

Leu Lys Glu Ala Phe 35

<210> 82

<211> 37

<212> PRT

<213> Artificial

<220>

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<400> 82

Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu Lys Glu

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Phe Phe Pro Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys 20 25

Leu Lys Glu Phe Phe 35

<210> 83

<211> 37

<212> PRT

<213> Artificial Sequence

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<220>

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<400> 83

Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Leu Lys Glu 5 10

Ala Phe Pro Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys . 20

Leu Lys Glu Ala Phe 35

<210> 84

<211> 37

<212> PRT

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<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

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Ala Phe Pro Asp Lys Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Trp 25

Leu Lys Glu Ala Phe 35

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<210> 85
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<212> PRT
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Phe Leu Pro Asp Lys Trp Lys Ala Val Tyr Asp Lys Phe Ala Glu Ala
           20
                               25
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Phe Lys Glu Phe Leu
       35
<210> 86
<211> 37
<212> PRT
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       unprotected D or L form.
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                                   10
Ala Phe Pro Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys
           20
Phe Lys Glu Ala Phe
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<210> 87
<211> 37
<212> PRT
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<223> Chemically synthesized peptide. Amino acids can be protected or

unprotected D or L form.

<220>

<400> 87 .

Asp Trp Leu Lys Ala Phe Val Tyr Asp Lys Val Phe Lys Leu Lys Glu 1 5 10 15

Phe Phe Pro Asp Trp Leu Lys Ala Phe Val Tyr Asp Lys Val Phe Lys 20 25 30

Leu Lys Glu Phe Phe 35

<210> 88

<211> . 37

<212> PRT

<213> Artificial Sequence

<220>

<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

<400> 88

Asp Trp Leu Lys Ala Phe Tyr Asp Lys Phe Ala Glu Lys Phe Lys Glu 1 5 10 15

Phe Phe Pro Asp Trp Leu Lys Ala Phe Tyr Asp Lys Phe Ala Glu Lys 20 25 30

Phe Lys Glu Phe Phe 35

<210> 89

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

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Glu Trp Phe Lys Ala Phe Tyr Glu Lys Val Ala Glu Lys Phe Lys Glu
1 5 10 15

Ala Phe

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<210> 90
<211> 14
<212> PRT
<213> Artificial Sequence
<220>
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<223>
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<400> 90
Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe
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<210> 91
<211> 14
<212> PRT
<213> Artificial Sequence
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<223>
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.<400> 91
Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu
               5
<210> 92
<211> 14
<212> PRT
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<400> 92
Phe Lys Ala Phe Tyr Glu Lys Val Ala Glu Lys Phe Lys Glu
               5
<210> 93
<211> 17
<212> PRT
<213> Artificial Sequence
<220>
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       unprotected D or L form.
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Asn Met Ala Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys 5 10 Glu <210> 94 <211> 17 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form. <400> 94 Asn Met Ala Phe Lys Ala Phe Tyr Glu Lys Val Ala Glu Lys Phe Lys 5 10 . Glu <210> 95 <211> 21 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form. <400> 95 Asn Met Ala Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys 10 Phe Lys Glu Ala Phe 20 <210> 96 <211> 21 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

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Asn Met Ala Glu Trp Phe Lys Ala Phe Tyr Glu Lys Val Ala Glu Lys 10 Phe Lys Glu Ala Phe 20 <210> 97 <211> 17 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form. <400> 97 Asn Met Ala Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu Ala Phe <210> 98 <211> 17 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form. <400> 98 Asn Met Ala Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys 5 15 Phe <210> 99 <211> 39 <212> PRT <213> Artificial Sequence <220> <223> Chemically synthesized peptide. Amino acids can be protected or

unprotected D or L form.

<400> 99

Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe Lys Glu 1 5 10 15

Phe Phe Asn Met Ala Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Phe 20 25 30

Glu Lys Phe Lys Glu Phe Phe 35

<210> 100

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

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Glu Trp Leu Lys Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Lys Glu 1 5 10 15

Phe Phe Asn Met Ala Glu Trp Leu Lys Ala Phe Tyr Glu Lys Val Phe 20 25 30

Glu Lys Phe Lys Glu Phe Phe 35

<210> 101

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

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Ala Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe Lys Glu Phe Phe 20 25 30

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<210> 102
<211> 31
<212> PRT
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<223>
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       unprotected D or L form.
<400> 102
Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Lys Glu Phe Phe Asn Met
1
                5
                                    10
Ala Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Lys Glu Phe Phe
            20
<210> 103
<211> 31
<212> PRT
<213> Artificial Sequence
<220>
<223>
      Chemically synthesized peptide. Amino acids can be protected or
       unprotected D or L form.
<400> 103
Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe Asn Met
               5
Ala Asp Trp Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe
                                25
<210> 104
<211> 31
<212> PRT
<213> Artificial Sequence
<220>
      Chemically synthesized peptide. Amino acids can be protected or
       unprotected D or L form.
<400> 104
Glu Trp Leu Lys Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Asn Met
                                    10
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Ala Glu Trp Leu Lys Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe

25

20

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<210> 105
<211> 31
<212> PRT
<213> Artificial Sequence
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<223> Chemically synthesized peptide. Amino acids can be protected or
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<400> 105
Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe Lys Glu Asn Met
                        · 10
Ala Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Lys Phe Lys Glu
                               25
           20
<210> 106
<211> 31
<212> PRT
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      unprotected D or L form.
<400> 106
Leu Lys Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Lys Glu Asn Met
Ala Leu Lys Ala Phe Tyr Glu Lys Val Phe Glu Lys Phe Lys Glu
                               25
           20
<210> 107
<211> 18
<212> PRT
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<223>
      Chemically synthesized peptide. Amino acids can be protected or
      unprotected D or L form.
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Phe Leu

<400> 107

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Asp Lys Trp Lys Ala Val Tyr Asp Lys Phe Ala Glu Ala Phe Lys Glu

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<210> 108
<211> 18
<212> PRT
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<223>
       unprotected D or L form.
<400> 108
Asp Lys Leu Lys Ala Phe Tyr Asp Lys Val Phe Glu Trp Ala Lys Glu
               5
                                   10
Ala Phe
<210> 109
<211> 3
<212> PRT
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<400> 109
Lys Arg Ser
<210> 110
<211> 3
<212> PRT
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<400> 110
Lys Arg Thr
<210> 111
<211>
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<220>
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<400> 111
Trp Arg Ile
<210> 112
<211> 3
<212> PRT
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<400> 112
Trp Arg Leu
<210> 113
<211> 3
<212> PRT
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      unprotected D or L form.
<400> 113
Phe Arg Ile
<210> 114
<211> 3
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<400> 114
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<210> 115
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<211> 3
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<220>
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<400> 115
Lys Glu Ser
<210> 116
<211> 3
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<400> 116
Lys Glu Thr
<210> 117
<211> 3
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<400> 117
Lys Asp Ser
<210> 118
<211> 3
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<223>
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<400> 118
Lys Asp Thr
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<210> 119
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<212> PRT
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<400> 119
Lys Arg Ser
<210> 120
<211> 3
<212> PRT
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<400> 120
Lys Arg Thr
<210> 121
<211> 3
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<223>
      Chemically synthesized peptide. Amino acids can be protected or
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<400> 121
Leu Glu Ser
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<210> 122
<211> 3
<212> PRT
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<223> Chemically synthesized peptide. Amino acids can be protected or
      unprotected D or L form.
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<400> 122
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<210> 123
<211> 3
<212> PRT
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      unprotected D or L form.
<400> 123
Trp Arg Ser
<210> 124
<211> 3
<212> PRT
<213> Artificial Sequence
<220>
<223> Chemically synthesized peptide. Amino acids can be protected or
      unprotected D or L form.
<400> 124
Trp Asp Ser
<210> 125
<211> 3
<212> PRT
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<220>
<223> Chemically synthesized peptide. Amino acids can be protected or
      unprotected D or L form.
<400> 125
Trp Glu Ser
<210> 126
<211> 3
<212> PRT
<213> Artificial Sequence
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<220>
<223> Chemically synthesized peptide. Amino acids can be protected or
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<400> 126
Trp Arg Ser
<210> 127
<211> 3
<212> PRT
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       unprotected D or L form.
<400> 127
Lys Glu Leu
<210> 128
<211> 3
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       unprotected D or L form.
<400> 128
Leu Arg Ser
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<210> 129
<211> 3
<212> PRT
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<223>
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Leu Asp Ser
1
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<210> 130
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<400> 130
Leu Glu Ser
<210> 131
<211> 3
<212> PRT
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<400> 131
Leu Arg Ser
<210> 132
<211> 3 ·
<212> PRT
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Leu Arg Thr
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<210> 133
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<223>
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<400> 133
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<210> 134
<211> 3
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<400> 134
Lys Arg Ser
1
<210> 135
<211> 3
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<400> 135
Trp Arg Ile
<210> 136
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       unprotected D or L form.
<400> 136
Trp Arg Leu
<210> 137
<211> 3
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                                    -47- ·
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unprotected D or L form.
<400> 137
Phe Arg Ile
<210> 138
<211> 3
<212> PRT
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Phe Arg Leu
<210> 139
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Trp Arg Phe
<210> 140
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<223> Chemically synthesized peptide. Amino acids can be protected or
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<400> 140
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<210> 141
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<210> 142
<211> 3
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<400> 142
Trp Arg Tyr
<210> 143
<211> 3
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<220>
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<223> Xaa is ornithine
<400> 143
Xaa Arg Ser
<210> 144
<211> 3
<212> PRT
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<223> Chemically synthesized peptide. Amino acids can be protected or
      unprotected D or L form.
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<400> 144
Lys Arg Ser
<210> 145
<211> 3
<212> PRT
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<4.00> 145
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<210> 146
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1
<210> 148
<211> 3
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<400> 148
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<210> 149
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Lys Arg Thr
1
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<211> 3
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<223>
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<400> 154
Lys Glu Ser
<210> 155
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<223>
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<400> 155
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<223>
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<400> 156
Lys Asp Ser
<210> 157
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       3
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<400> 157
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<210> 158
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<223>
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<400> 158
Lys Glu Leu
<210> 159
<211>
      3
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1
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<400> 160
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1
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<400> 162
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unprotected D or L form.
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<210> 451
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unprotected D or L form.

<400> 451

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Ala Phe

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Ala Phe

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Ala Phe
<210> 455
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<400> 455
Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu
Ala Phe
<210> 456
<211> 18
<212> PRT
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Ala Phe
<210> 457
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Ala Phe

<210> 458

<211> 18

<212> PRT

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Ala Phe

<210> 459

<211> 18

<212> PRT

<213> Artificial Sequence

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Ala Phe

<210> 460

<211> 18

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<400> 460

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Ala Phe

<210> 461

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

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Ala Phe

<210> 462

<211> 18

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Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu 1 5 10 15

Ala Phe

<210> 463 .

<211> 18

<212> PRT

<213> Artificial Sequence

<220>

<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

<400> 463

Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu 1 5 10 15

Ala Phe

<210> 464

<211> 18

<212> PRT

<213> Artificial Sequence

.<220>

<223> Chemically synthesized peptide. Amino acids can be protected or unprotected D or L form.

<400> 464

Asp Trp Phe Lys Ala Phe Tyr Asp Lys Val Ala Glu Lys Phe Lys Glu $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Ala Phe